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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/033,979 | 01/03/2002 | Han Su Pae | K-0386 | 9137 |

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EXAMINER

ALPHONSE, FRITZ

ART UNIT PAPER NUMBER

2133

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,979

Applicant(s)

HAN SU PAE ET AL.

Examiner

Fritz Alphonse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-8,12,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-5, 9, 10,11,13-15,18, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 12/12 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6-8, 12, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson (U.S. Pat. No. 6,229,505) in view of Dodabalapur (U.S. Pat. No. 6,384,804).

As to claim 1, Dawson (fig. 3) shows a driving circuit of an active matrix method in a display device including a first switch (transistor 360) connected data line (310) and scan lines (320) to switch an externally applied control voltage (col. 4, lines 41-67); a driving unit (note the voltage source V_{DD} and capacitor C_c) storing the control voltage by switching of the first switch (360), and making the display device (i.e., OLED) emitting lights by the stored control voltage (see col. 5, lines 15-23). Kwon teaches about a second switch (370) switching a current applied to the display device by the control voltage applied from the driving unit.

Dawson does not explicitly disclose a deviation compensator detecting the current applied to the display device by switching of the second switch, and controlling the control voltage, thereby compensating luminance-deviation of the display device according to deviation of the threshold voltages of the driving unit.

However, in the same field of endeavor, Dodabalapur discloses a display apparatus with organic smart pixel, which comprising a drive/compensation circuitry for performing various compensatory functions and controlling the control voltage, thereby compensating luminance-

deviation of the display device according to deviation of the threshold voltages of the driving unit (col. 2, lines 32-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Dawson's LED display with the display device with drive/compensation circuitry, as disclosed by Dodabalapur. By doing so, the drive/compensation circuitry would help to overcome some of the non-idealities due to slow changes in physical characteristics (e.g., mobility, threshold voltage) of the organic components (col. 2, lines 26-31).

As to claim 6, Dawson (fig. 3) discloses a switch including: a first transistor (365) formed between the driving unit (355 and 390) and the display device (OLED) to switch the current applied to the display device, and a second transistor (370) formed to switch the current applied to the deviation compensator.

As to claims 7 and 16, Dawson (fig. 3) discloses a driving circuit of the active matrix method in the display device, wherein the first and second transistors (360, 370) are PMOS transistors, and are driven by different control signals.

As to claims 8 and 17, Dawson (fig. 2) discloses a driving circuit, wherein the pixel structure requires NMOS transistor, and the second transistor (M2) is PMOS transistor (col. 4, lines 11-14).

As to claim 12, the claim differs from claim 1 by the additional limitations: "a first transistor formed between the driving unit and the display device to switch the current applied to the display device; and a second transistor formed between the driving unit and the deviation compensator to switch the current applied to the deviation compensator". However, Dawson (fig.

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3) shows a first transistor (P1) formed between the driving unit and the display device (OELD) and a second transistor (P2).

Allowable Subject Matter

3. Claims 2-5, 9-11, 13-15, 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stewart et al. (U.S. Pat. No. 5,952,789) disclose a pixel structure for use in a display using organic light emitting diodes.

Dawson et al. (U.S. Pat. No. 6,307,322) disclose a thin-film transistor circuitry with reduced sensitivity to variance in transistor threshold voltage.

Huang (U.S. Pat. No. 6,501,449) discloses a high matching precision OLED driver by using a current-cascaded method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse whose telephone number is (703)-308-8534. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is (703)-306-0377.


Fritz Alphonse

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September 17, 2004

